## **Towards 100% Renewable Energy**

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#### **IRENA** Coalition for Action (CfA)



## https://coalition.irena.org/

# Setting the Scene: Brief Comments on the CfA Working Group Towards 100% Renewable Energy Systems





Renewable energy encompasses all renewable sources, including bioenergy, geothermal, hydropower, ocean, solar and wind energy. One hundred percent renewable energy means that all sources of energy to meet all end use energy needs in a certain location, region or country are derived from renewable energy resources 24 hours per day, every day of the year. Renewable energy can either be produced locally to meet all local end-use energy needs (power, heating and cooling, and transport) or can be imported using supportive technologies and installations such as electrical grids, hydrogen or heated water. Any storage facilities to help balance the energy supply must also use energy derived only from renewable sources.





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#### **Important Notes about the Definition**

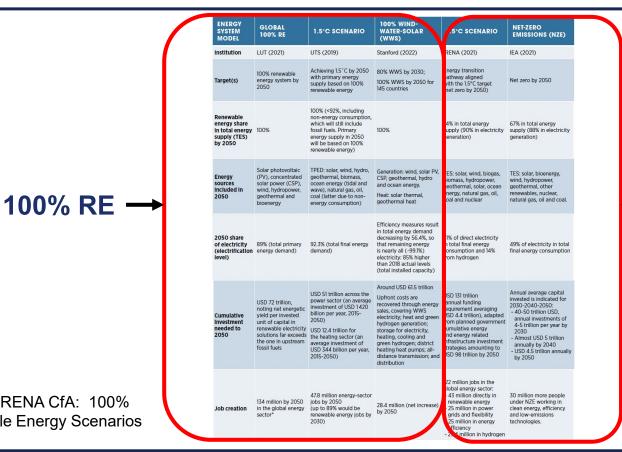


- Represents all end uses (e.g. Transport, Heating and Cooling); not just electricity sector
- However, the implication is that our energy demands will be met more and more by electrification
- 100% RE mean no carbon emissions at the source (no CCUS); different from "Net-Zero"



#### 5 Scenarios Studied: 3 are 100% RE





**Net-Zero** 

Source: IRFNA CfA: 100% Renewable Energy Scenarios



#### **Key Findings**



- "Net-Zero" still includes use of fossils for our energy supply; not 100%
- Technologies largely exist to achieve 100%
- Total cost of energy transformation generally much lower for 100% than for net-zero
- Political will and financing still needed



#### **Key Recommendations**



- 1) Embrace 100% RE; Phase-out Fossil Fuels
- 2) Prioritize Energy Efficiency
- 3) Expand Electrification
- 4) Upgrade to a resilient, decentralized, and flexible energy system
- 5) Foster International Cooperation



#### Big Technological Challenges Remain



- Transport (esp. shipping, aircraft, commercial vehicles)
- Heating and Cooling (esp. high temperature industrial heat)
- Electricity (esp. Grid flexibility and reliability, digitization and security)